Parts of southern Asia and south-west Pacific braced for severe weather

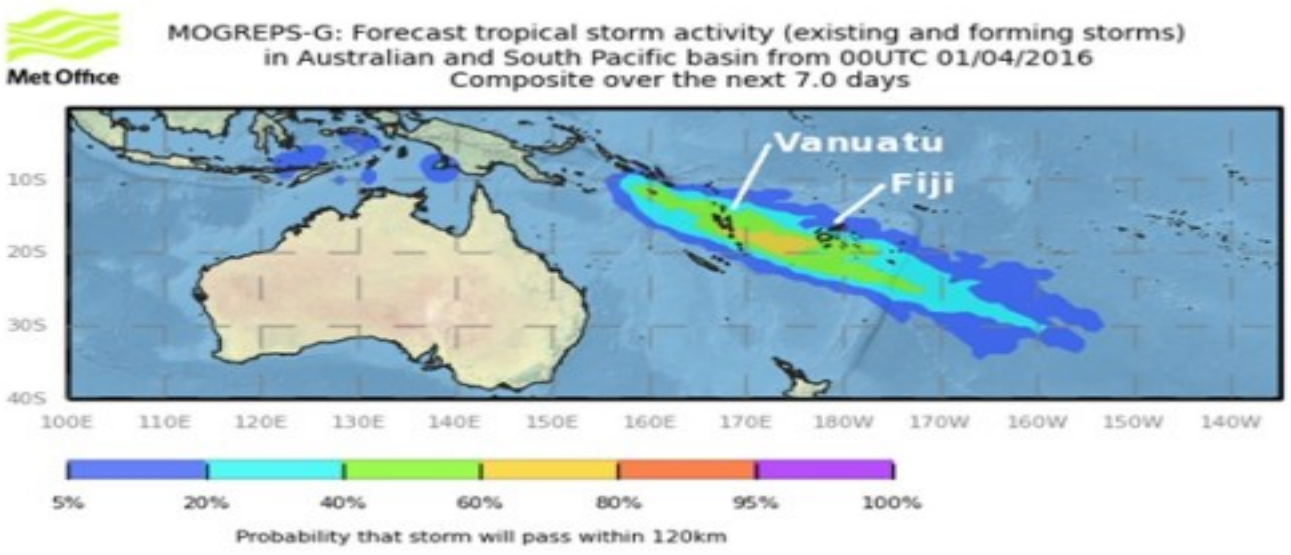
Description

Residents in parts of southern Asia and the south-west Pacific are bracing themselves for potentially severe weather this weekend.

Of particular concern is the potential for flash floods, landslides and avalanches in Pakistan, while Bangladesh and the north-east Indian district of Assam are on severe storm alert for tornadoes for the next seven days.

Meteorologists are also keeping a close eye on the potential for cyclone activity in the south-west Pacific. Julian Heming is an expert in tropical cyclones for the Met Office, he said: “The southern hemisphere tropical cyclone season normally tails off in April, but it seems that there may be a late season storm about to form in the South Pacific.

“Computer models have consistently predicted the formation of a storm close to Vanuatu on Sunday or Monday which then strengthens and moves south-eastwards.



“Predictions from the Met Office model suggest a 60-80 per cent chance that a tropical storm will track across the region between Vanuatu and Fiji in the next seven days. Latest forecasts suggest that if this storm develops it is most likely to pass just south of Fiji. However, any shift northwards in the forecast track in the coming days will take the storm over the islands recently devastated by Cyclone Winston in February.”

Elsewhere, experts are expecting an increase in thunderstorm activity over northern Pakistan potentially producing 150mm-250mm of rainfall over this weekend.

Paul Hutcheon works in the Met Office Global Guidance Unit. He said: “The situation facing northern Pakistan potentially is very serious. Around two weeks ago Pakistan was rocked by severe floods

which, reportedly, caused the deaths of around 50 people.

“When you combine the predictions for severe rainfall with the potential for snow melt, associated with a plume of warm air, then the consequences for the next few days could be severe.”

This weekend is also likely to be the start of the Bangladesh tornado season. Paul Hutcheon added: “Upper troughs south of the Himalayas are engaging a very warm plume of air that are producing a risk of severe thunderstorms and tornadoes across parts of Bangladesh and Assam over the next five to seven days. Our forecasts suggest a risk of very large hail and tornadoes.”

Official warnings for the tropical cyclones in the South Pacific are produced by the Fiji Meteorological Service. The Met Office routinely supplies predictions of cyclone tracks from its global forecast model to regional meteorological centres worldwide, which are used along with guidance from other models in the production of forecasts and guidance. We also provide updates on current tropical storms via @metofficestorms on Twitter.

Date Created
April 2016

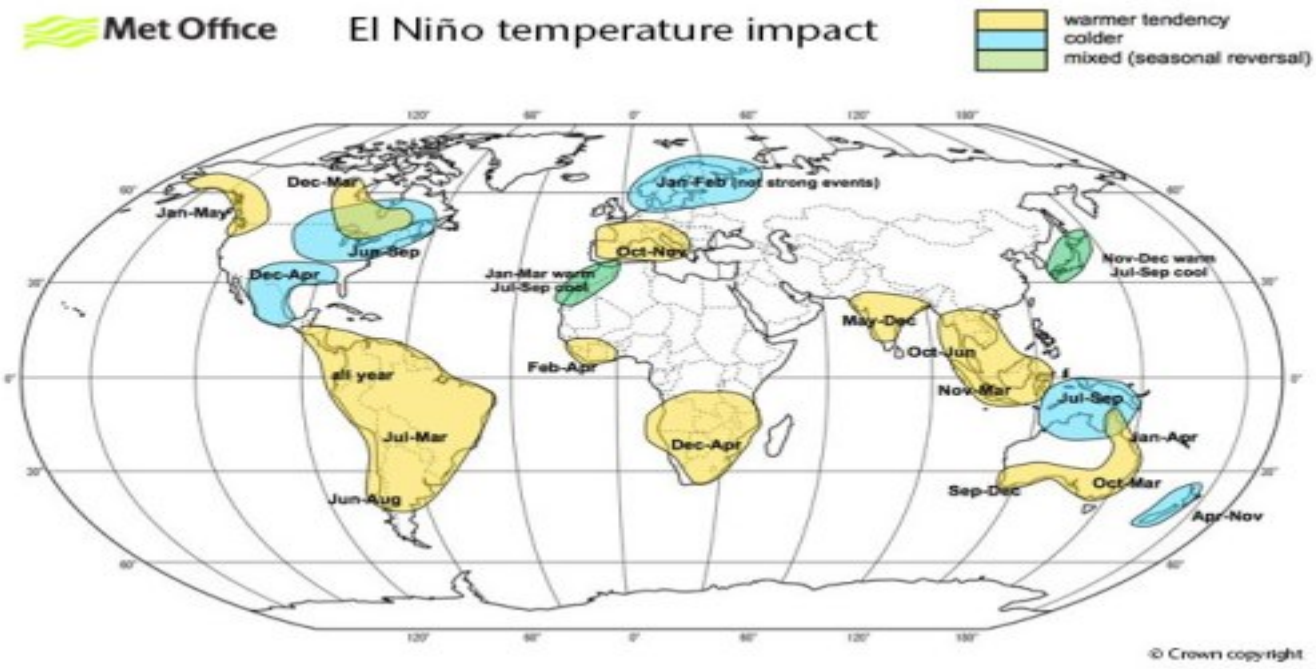
If the world has another record warm year, will everywhere be warmer?

Description

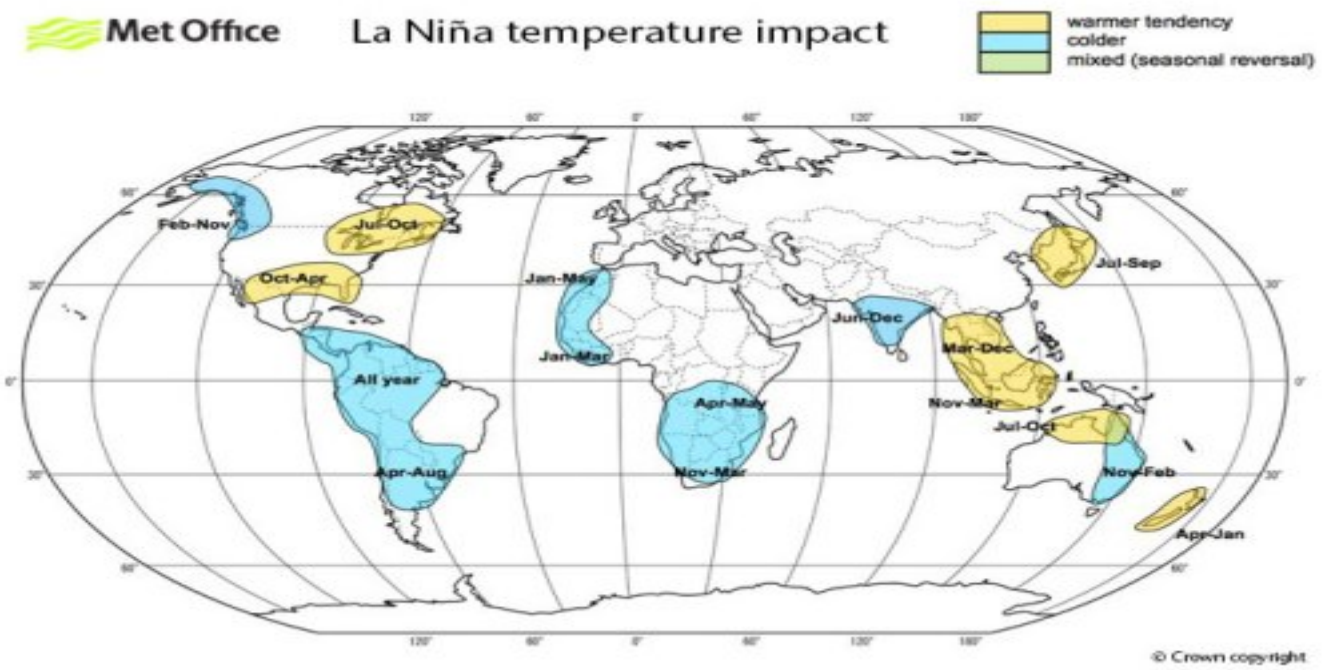
Across the world 2015 was the hottest year on record. When compared with the long-term average between 1850 and 1900, the temperature was around 1C warmer. This increase is mostly the result of long-term warming linked to greenhouse gases, but temperatures in 2015 were also boosted by a very active El Niño – warmer-than-normal ocean temperatures in the Tropical East Pacific. Although one of the strongest El Niño events on record is now waning, it is expected to have a strong impact on the global average temperatures for 2016, which is likely to be another record year.

However, does it follow that if 2016 is another record year that the UK will experience record weather too? Jeff Knight is a climate scientist with the Met Office Hadley Centre. He said: “Global mean temperatures are not a good way of forecasting the year-to-year variations in UK climate, which depend much more on a range of local factors including pressure patterns, wind directions and sea temperatures around the UK.

“Furthermore, evidence from published research for links between the Tropical Pacific and UK summer weather is limited.”



The current El Niño event is expected to terminate before the northern hemisphere summer arrives in June, July and August. Jeff Knight added: “In some years, the El Niño transitions into its counterpart, the La Niña, which has many of the opposite characteristics to El Niño.”



The subsequent evolution of the Tropical Pacific is not yet clear with some long-range forecast systems suggesting a return to neutral conditions, while others suggest a transition to La Niña.

Jeff Knight added: “Many climate indicators, such as global mean temperature, lag El Niño by several months, implying that the record high levels seen recently will continue further into 2016. Conditions in the UK, however, will also be heavily influenced by factors affecting our weather closer to home.”

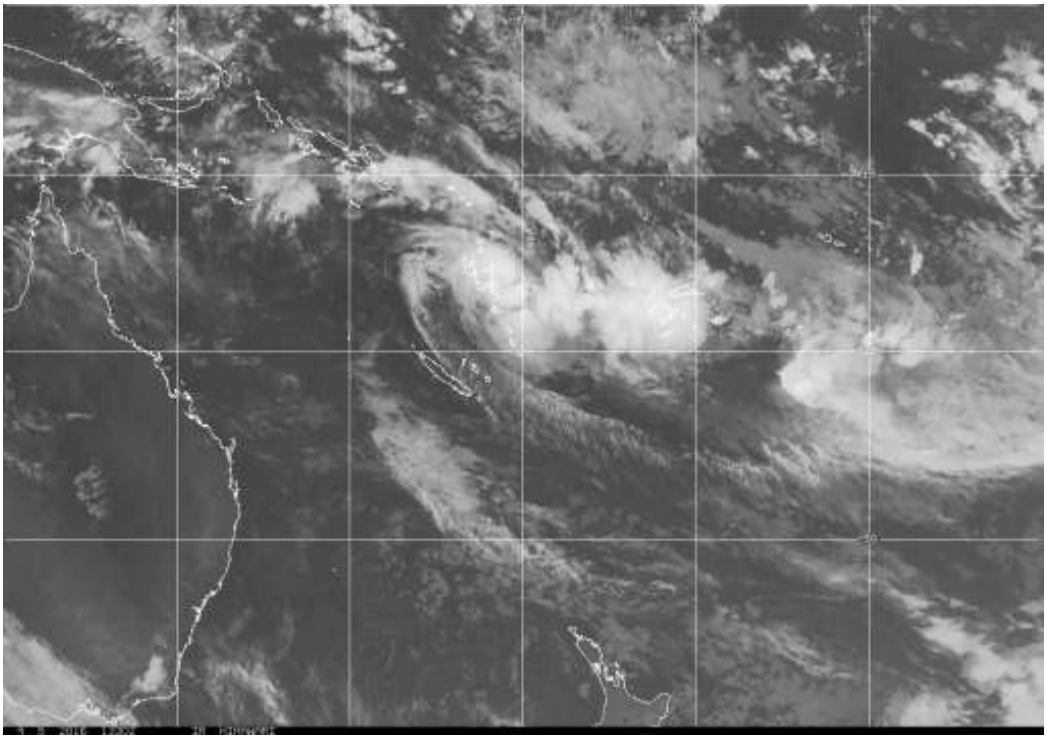
Date Created
April 2016

Late-season tropical cyclone Zena in the South Pacific

Description

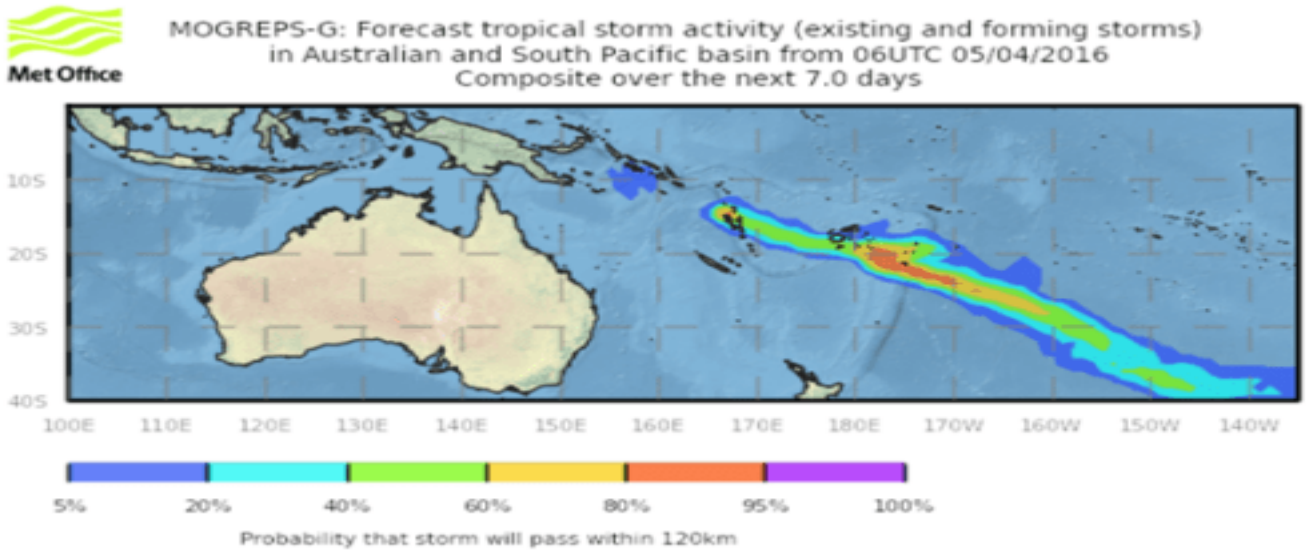
Over the last few hours Tropical Cyclone Zena has formed across the northern islands of Vanuatu in the south-west Pacific . This is a late-season storm, with the southern hemisphere season typically tailing off in April.

As we said in last week's blog, we had been expecting thunderstorm activity in this area to consolidate into a tropical cyclone. Over the past few days, the Met Office has been monitoring a slow-moving area of active thunderstorms which has brought torrential rainfall to much of Fiji and Vanuatu in the last few days. For example, 236mm of rain was reported in 12 hours on the volcanic island of Ono-i-Lau yesterday. Meanwhile, 208mm was reported in 24 hours in Nadi, on the western side of the main Fiji island of Viti Levu on Monday. Further heavy rain has affected the Nadi area today, with 29mm reported between 00 UTC and 12 UTC.



Tropical Cyclone Zena at 1330 UTC on 5 April 2016. Image from the Himawari satellite.

This system is expected to track east, or south-east towards Fiji over the next few days, bringing mean windspeeds of 45-60mph, with much higher gusts. However, Deputy Chief Operational Meteorologist Jason Kelly, who works in the Global Guidance Unit, said: “Of greater concern is the expected rainfall totals, with the Met Office’s Global Model signalling the possibility of a further 250-400 mm of rain



Official warnings for the tropical cyclones in the South Pacific are produced by the Fiji Meteorological Service. The Met Office routinely supplies predictions of cyclone tracks from its global forecast model to regional meteorological centres worldwide, which are used along with guidance from other models in the production of forecasts and guidance. We also provide updates on current tropical storms via @metofficestorms on Twitter.

Date Created
April 2016

Met Office scientist wins international award for ‘landmark’ climate science

Description

Met Office scientist Rosie Eade has received international recognition and an award for her landmark research on the predictability of Atlantic climate seasons for years ahead.

Much of the weather in the North Atlantic is dominated by the strength of the North Atlantic Oscillation – a pressure gradient between high pressure around the Azores, in the southern North Atlantic, and low pressure in the northern Atlantic, generally south of Iceland. The greater the pressure difference between the two areas, the greater the strength of the NAO and therefore the greater the impacts for Europe and beyond. A strong NAO tends to bring more warm and moist air from the west, bringing wetter and windier weather to northern Europe.

Rosie Eade and her fellow collaborators realise that the potential for accurate forecasts (‘predictability’) of regional events, such as the NAO, is likely to have been previously underestimated.

The significance of Rosie Eade’s work has been recognised by the World Meteorological Organization, which has awarded her the prestigious WMO Professor Mariolopoulos Trust Fund Award for 2016 for her paper: “Do seasonal-to-decadal climate predictions underestimate the predictability of the real world?”

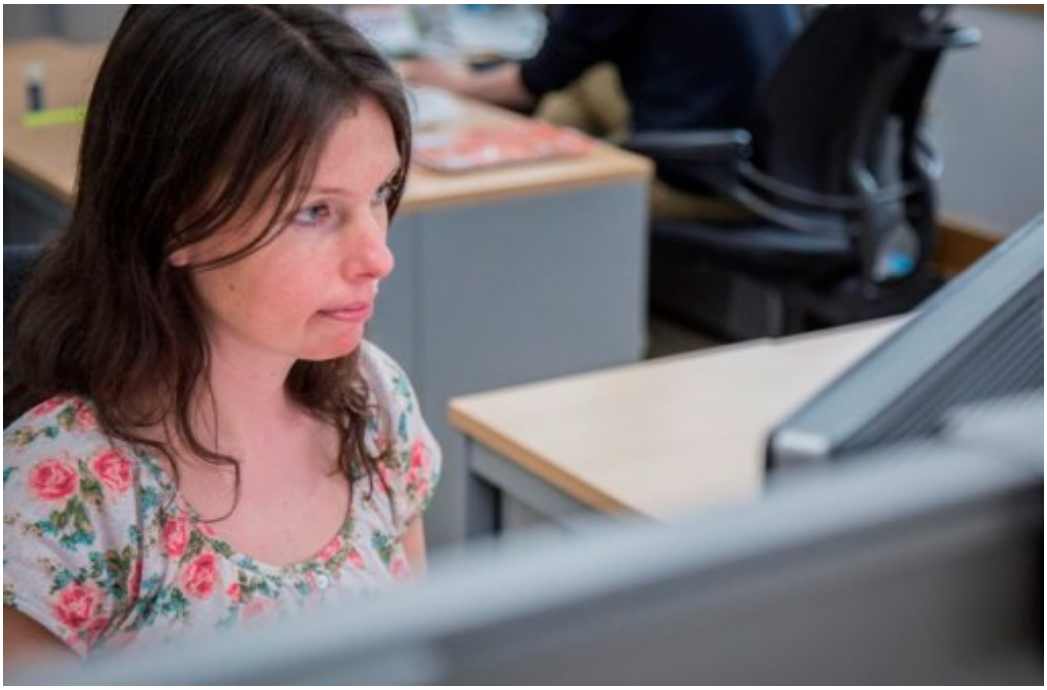
Adam Scaife, the Met Office head of long-term forecasting said: “This highly original paper demonstrates that predictability of climate out to years ahead is likely to have been previously underestimated, particularly for the Euro-Atlantic region in winter.”

The research shows that climate predictability is underestimated in many studies because the strength of predictable signals in Atlantic winter climate is underestimated in climate models, and individual climate predictions out to a decade ahead match each other less than they match the real world.

Adam Scaife added: “This radical discovery means that apparent uncertainty is overestimated in Atlantic winter climate predictions, with the potential to underestimate the predictable influence of the North Atlantic Oscillation on our weather in winter.”

Rosie said: “I am excited about our area of research as we are developing predictions that we can personally verify, but further ahead than standard weather forecasts. In fact, far enough in advance that we have the potential to help communities prepare for weather and climate-related impacts around the world.

“This can mean, for example, providing guidance to city councils to aid planning for the coming UK winter, or to the UK renewable energy industry to aid planning for the coming years in terms of changes in supply related to wind, or demand related to temperature.”



Rosie Eade was one of a team working on the landmark paper. Pictures: Simon Hammett, Met Office

The team of scientists find that current climate models can agree well with the real world, but that the chaotic element within the model itself can make it hard to see the year-to-year variation of the North Atlantic Oscillation.

If a climate model is run enough times resulting in multiple predictions for a single event – for example, for next winter's NAO index – then averaging over all the runs can give a useful 'ensemble' forecast, and these agree well with the real world even though the strength of the 'signal' may initially appearlow.

Rosie added: "This is a little like trying to capture the melody from a crowd of singers who are each slightly varying the song in their own way – the signal (song) is there but you need plenty of singers to be sure to average out the differences and so pick out the intended tune."

This result holds much promise for the future as it shows that there is scope for further improvements in predictions from months to a few years ahead.

The study has stimulated great interest at scientific conferences and is now inspiring others in the field.

The paper "Do seasonal-to-decadal climate predictions underestimate the predictability of the real world?" by Rosie Eade, Doug Smith, Adam Scaife, Emily Wallace, Nick Dunstone, Leon Hermanson and Niall Robinson is available online.

Date Created
April 2016

Cold again this weekend

Description

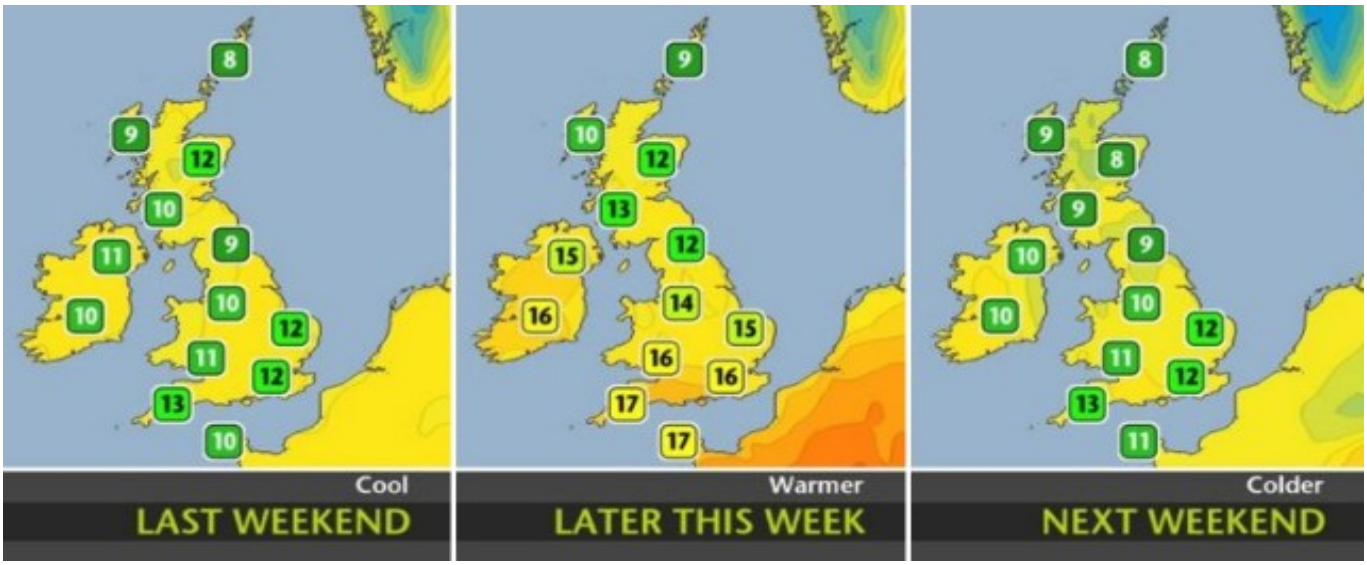
After a cool few days, temperatures will recover through the middle part of this week, before turning cooler again by the weekend.

The cool spell we saw during the weekend just gone, and the colder conditions expected at the end of this week, are linked to the Sudden Stratospheric Warming (SSW) event that occurred early last month . We are seeing high pressure to the north and west of the UK, resulting in a chilly northerly air flow – a type of weather pattern often called 'blocking' by meteorologists.

Blocking is frequently seen in the aftermath of SSW events, which involve the disruption of the normal westerly winds in the stratosphere. If the SSW had occurred earlier in the winter, the resulting pressure patterns could have produced some very cold and wintry weather.

Last weekend many places experienced rather chilly conditions with some wintry weather. Balmoral, Aberdeenshire, reached a maximum temperature of just 4.4 C on Saturday whilst sleet and snow fell as far south as the Midlands.

This week we can expect temperatures to recover and highs in the mid to high teens Celsius are possible for some by Thursday. However, another cold spell is going to bite back in time for the weekend. Temperatures will again struggle with many parts remaining in single digits. We are also going to see some further frosts as temperatures drop overnight.



Maps showing the contrast in maximum temperatures between last weekend, later this week, and next weekend

Whilst there will be some outbreaks of rain this week, there will also be a good deal of dry and occasionally sunny weather too. The colder air over this coming weekend does however bring the risk

of wintry showers to the north.

Keep up to date with the latest forecast information on our forecast pages, Facebook and Twitter sites and via our Weather App.

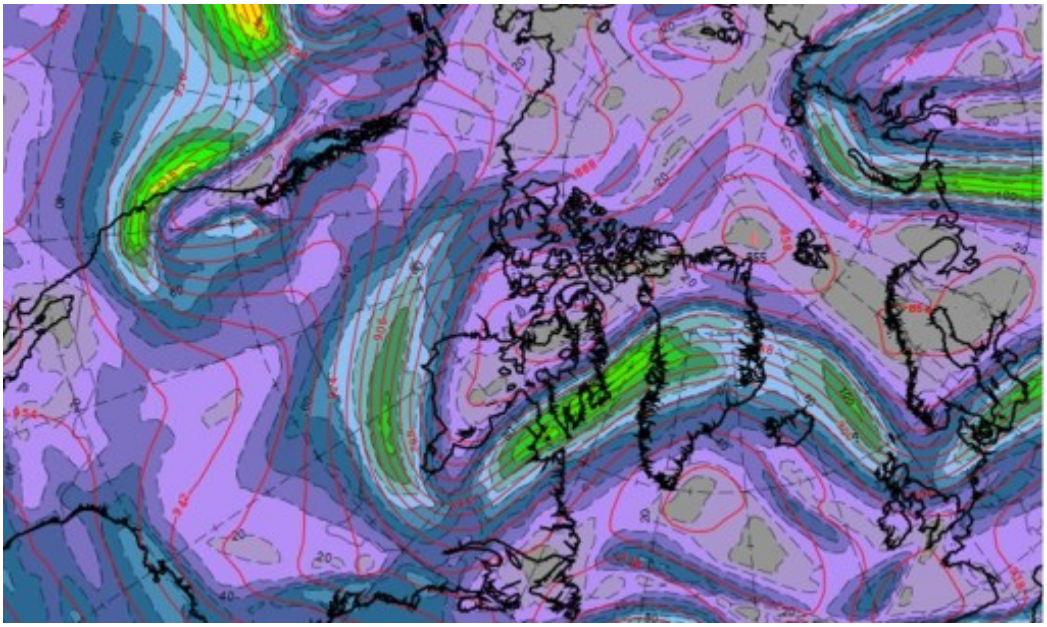
Date Created
April 2016

Cold weather on the way for the UK, but what about elsewhere in the world?

Description

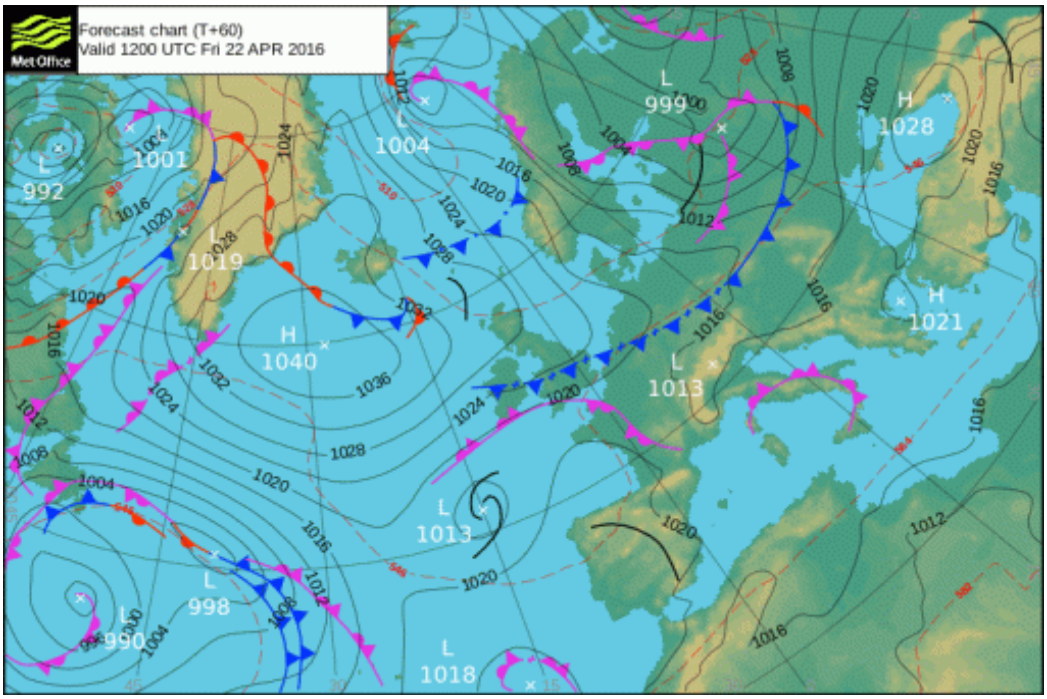
As the UK prepares for unseasonably cold weather, elsewhere around the globe we are seeing heatwaves, droughts, tropical storms and rainfall.

A very warm air mass across the Pacific Northwest of North America has built a ridge of high pressure which has pushed the jet stream across central Canada.



Jet stream winds for Friday night from North America to NW Europe

This is helping to build high pressure in the North Atlantic which is expected to remain slow moving this weekend and next week, allowing for a prolonged spell of northerly winds that will bring Arctic air south across the United Kingdom.

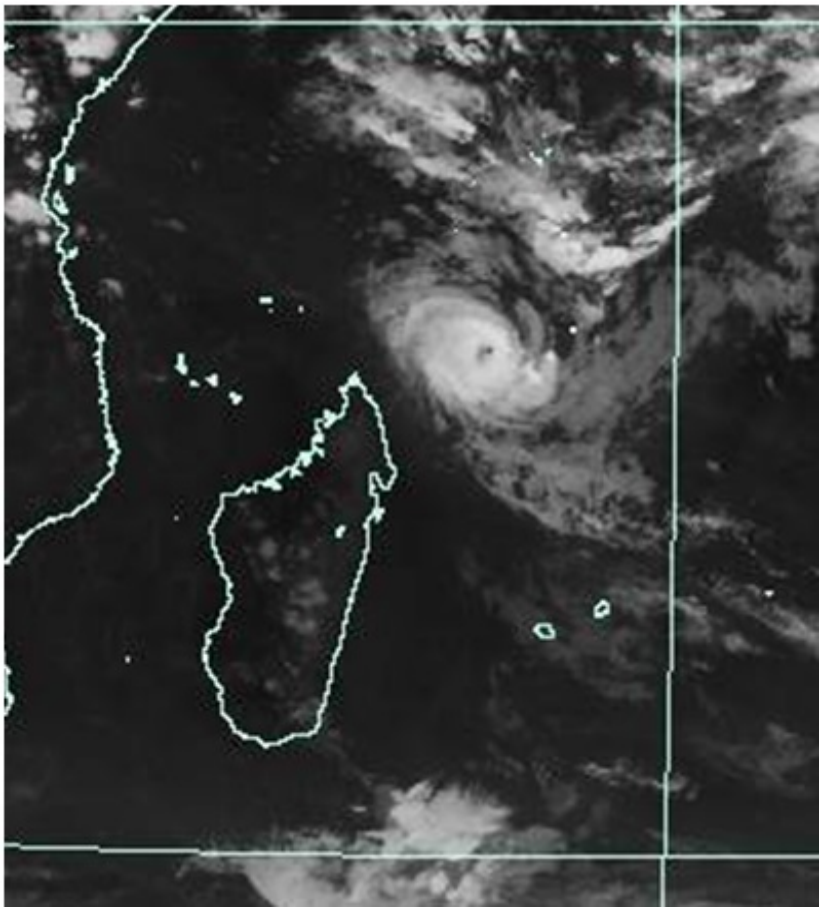


Surface Pressure Chart 22.04.2016

Meanwhile record April temperatures have been reached in Washington State, USA, and British Colombia, Canada, in recent days. Seattle recorded its warmest April temperature on Monday at 32 C (89 F). This was one of 3 consecutive days to see temperatures in excess of 27 C (80 F), the previous April record was 25 C (77 F), set back in 1962.

The record temperatures are one of the factors behind a very early start to the wildfire season in British Columbia which has destroyed homes and caused disruption on some highways in the north of the province.

Elsewhere, Tropical Cyclone Fantala is 250 miles NE of Madagascar and there is a risk of heavy rains which could cause flooding across the far north of Madagascar and some minor, sparsely populated islands as it tracks westwards this weekend.



Tropical Cyclone Fantala NE of Madagascar

There is also a tropical storm named Amos in the SW Pacific (between Fiji and Samoa). This is likely to strengthen further during the next few days, with a risk of the system attaining hurricane force winds by the weekend. As well as the strong winds, very heavy rainfall is expected with up to 500mm in a 24 hour period possible. The Samoan Islands look to be at risk of strong winds and flooding impacts from this weekend.

Back here in the UK, if you are looking for a forecast closer to home you can keep up to date with the latest information on our forecast pages, Facebook and Twitter sites and via our Weather App.

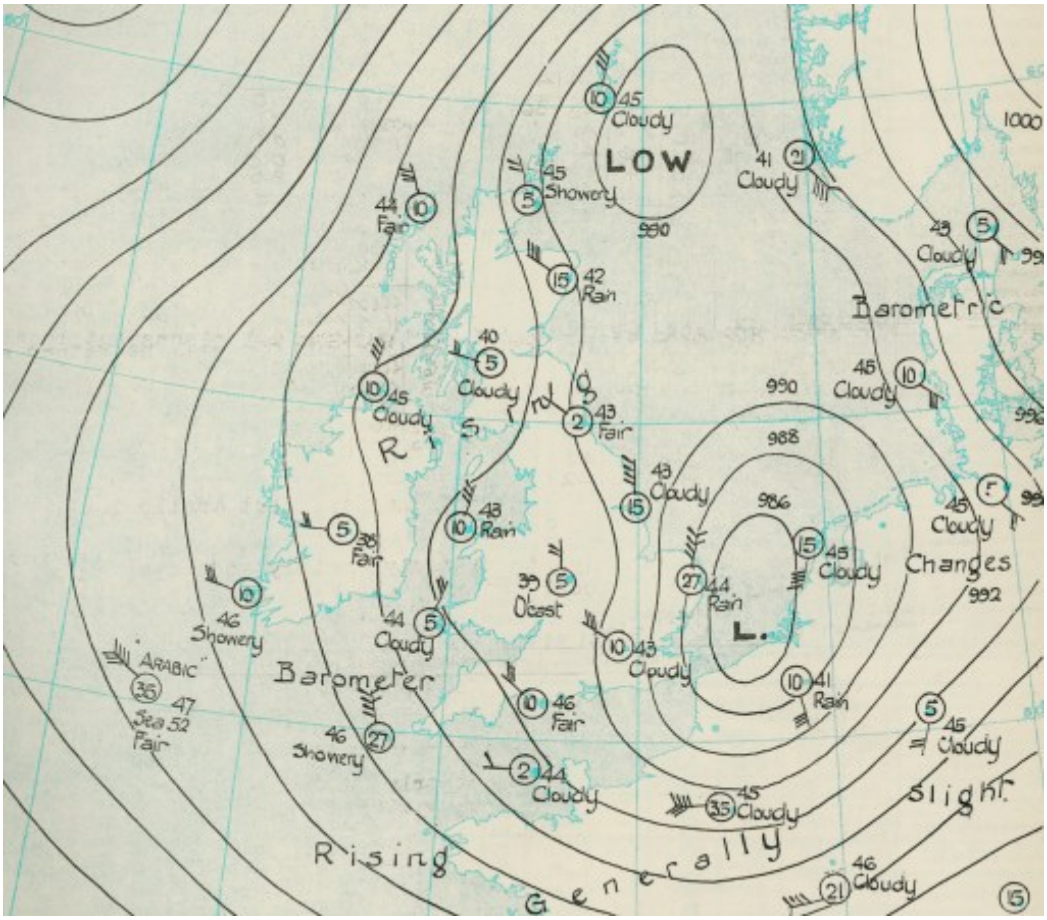
Date Created
April 2016

The weather on the day of the Queen’s birth

Description

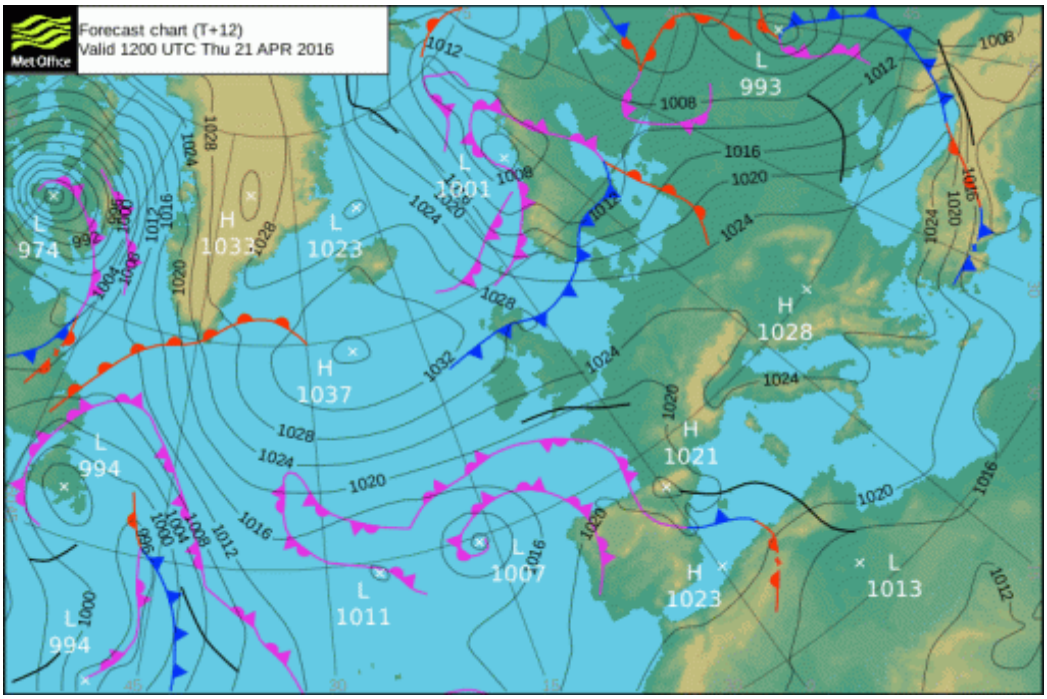
Today is the Queen’s 90th birthday and if you are out and about today the weather for many of us should be dry and fine with some weak sunshine. However back in 1926 when the Queen was born the picture was a little different.

The weather was unsettled and stormy across the UK on this day back in 1926 as a low pressure system over the North Sea weakened. As can be seen on the hand drawn chart below it was a fairly cloudy start to the day with moderate northwesterly to westerly winds (13 to 18 mph) and rain in places, some of which could have been thundery.



Synoptic chart 7am 21 April 1926

If you compare the chart for 1926 with the one for today you can see the difference. In 1926 low pressure dominated but now there is high pressure over the Atlantic which, while bringing largely settled weather for today, will drag cold air down from the north over the weekend resulting in unseasonably low temperatures and a risk of snow for some.



Pressure Chart 12 noon 21 April 2016

The Met Office has an archive of weather data which you can access if you want to check out what the weather was like on the day you were born.

The weather is the reason the Queen celebrates her birthday twice each year – once on the anniversary of her birth, and also on her “official” birthday in June.

This tradition was started in 1748 by George II who was born in November, and it was felt the weather would be too cold for an annual birthday parade. So instead, he combined his official birthday celebration with the annual Trooping the Colour.

All British sovereigns continue to be given the option of having an “official” birthday.

Keep up to date with the latest forecast information on our forecast pages, Facebook and Twitter sites and via our Weather App.

Date Created
April 2016

What’s the chance of an April shower?

Description

How probability helps our understanding of weather events

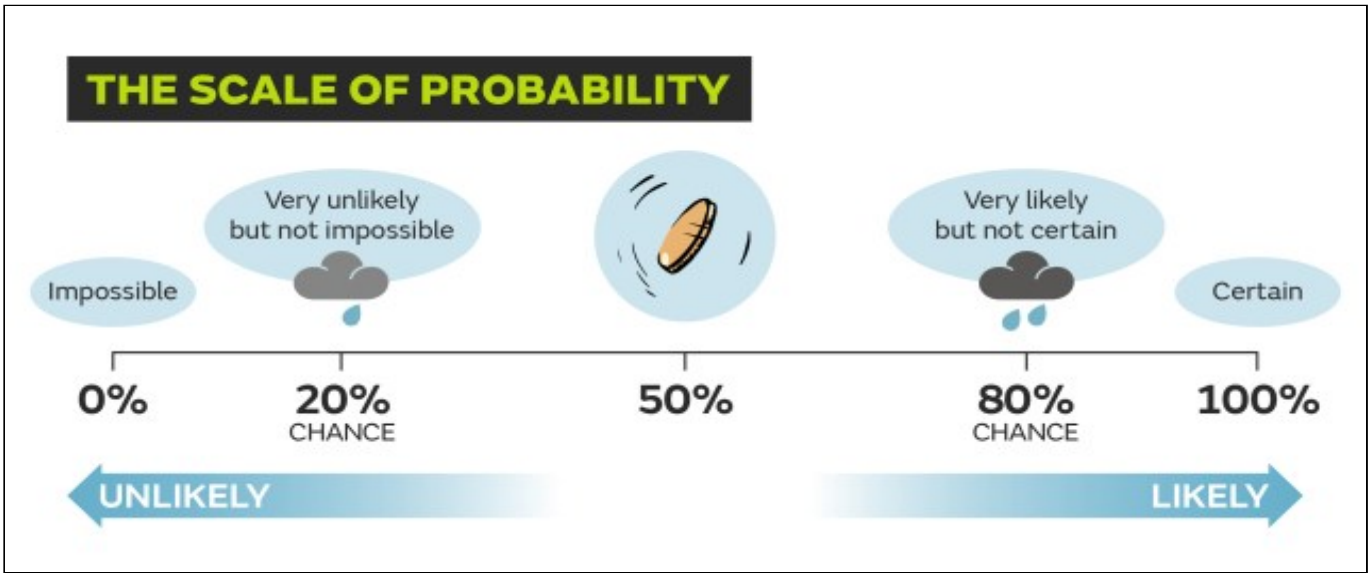
Springtime in the UK can be fickle. Longer, warmer days create anticipation of summer, yet the extra heat from the sun can fuel the development of clouds leading to April showers. By their very nature, these showers are hit and miss events, leading to misconceptions about the accuracy of the weather forecast.

The chaotic nature of weather with its many variables means that there are unavoidable limitations to what we can predict. Showers are a particularly challenging weather phenomenon to forecast, falling as sporadic bursts of rain from cumulus clouds. By calculating the confidence in a weather forecast, and providing probabilities we can give a clearer picture of any uncertainties. In doing so, we give both individuals and businesses a greater opportunity to plan their activities around the weather.

But what is probability?
Many people are familiar with expressing the uncertainty in the outcome of a horse race in terms of odds, and we can do something very similar with weather forecasts using probability, which expresses the chance of particular weather occurring.

Probability is a way of expressing the uncertainty of an event in terms of a number on a scale. One very common way of doing this is on a scale going from 0% to 100%, where impossible events are given a probability of 0% and events that will certainly happen are given a probability of 100%.

Other events that are as likely to happen as not are given a probability halfway along the scale, at 50%. An event that is pretty likely to happen, but could possibly not happen, might have a probability of 95%.



Understanding probability
Probability can be understood better by thinking about playing heads or tails. If a coin is tossed and the probability that it will come up Heads is 50%, this means that a Head is as likely as a Tail. If the coin is tossed again and again 1000 times, you'd expect something close to 500 Heads – not necessarily exactly 500, because coin tosses are always uncertain. But the 50% probability means Heads should come up on about half the tosses in the long run – if they don't, the probability of a Head wasn't 50% after all.

Probability and weather forecasting
If the probability of rain tomorrow in your region is 80% it doesn't mean that it will rain in 80% of the land area of your region, and not rain in the other 20%. Nor does it mean that it will rain for 80% of the time. What it does mean is that there is an 80% chance of rain occurring at any one place in your region.

If you don't see any rain the 80% forecast wasn't wrong, because it didn't say rain was certain. But, if you look at a long run of days, on which the probability of rain was 80%, you'd expect it to have rained on about 80% of them.

Probability, accuracy and the Met Office

We check our probability forecasts against what really happened and they verify well. Probabilities are just one of the tools that we use to help us forecast the weather. The Met Office is consistently one of the top two performing weather forecasting centres worldwide, with our four-day forecasts now as accurate as a one-day forecast in the 1980's. Extensive observations, complicated computer models, world-leading scientific techniques, supercomputer technology and the input of highly qualified meteorologists have all helped this advancement.

This means that people and businesses using our forecasts to take weather related decisions can make choices with more confidence, whether it's you deciding whether or not to hang out the washing before going to work or retailers moving their umbrellas at the front of the store.

Despite the advances in forecasting, tomorrow's weather can never be completely certain. However,

we can be more certain on some days than others and can communicate this by using probabilities, rather than just saying “there’s a good chance of rain”. Knowing how certain we are that it will rain can help you decide whether to change your plans or take a chance on dodging that April shower!

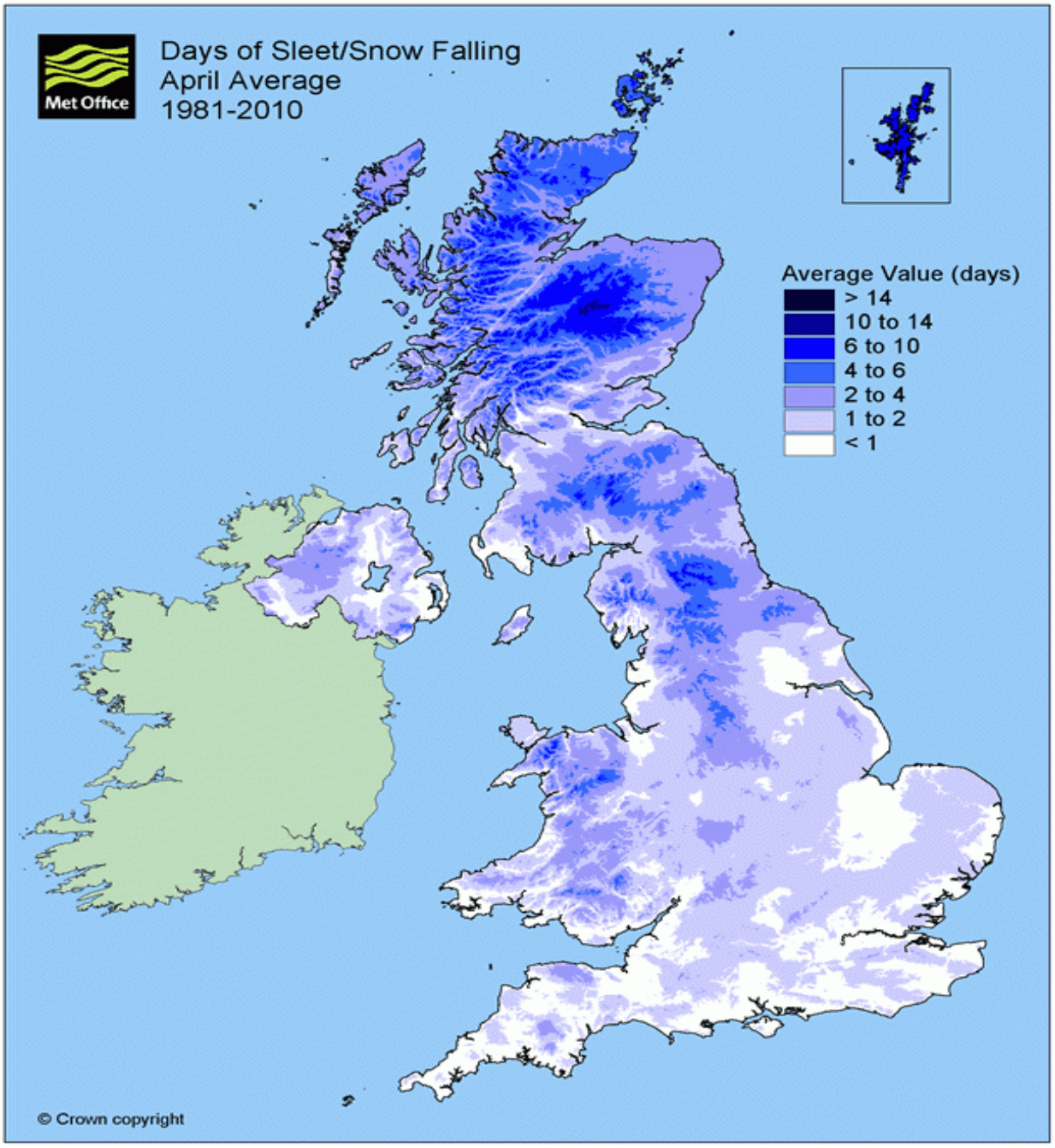
Date Created
April 2016

Snow in late April, more common than you may think

Description

This week many places have seen the type of weather you may usually associate with winter than late April, with wintry showers observed as far south as southern counties of England. However, snow at this time of year is not as unusual as you might expect.

Based on records from 1981 to 2010 the UK average is for 2.3 days of snow in April, which is more than the 1.7 days for an average November. Whilst the beginning of April is more likely to be white than the end of the month, there have been a number of notable snow events this late on.



Map showing average number of days with snow/sleet falling in April

Perhaps the most outstanding April snow event occurred in 1981 when there was significant snowfall widely from the 24th to the 28th. On 25 April over 30cm of snow was recorded over the high ground of the Pennines, with 29cm in Sheffield and 26cm in Buxton. The following day 25cm of snow was recorded at Okehampton, Devon, with 20cm at Blaisdon, Gloucestershire and 14cm at Corsham, Wiltshire. The heavy snowfall with blizzard conditions led to disruption to power supplies and travel.

Snow in Crookes, a suburb of Sheffield, 27 April 1981 (courtesy David Parker, Met Office Hadley Centre)

In 1989 there were late-April snow showers across parts of southern England, and even last year there was snow at the end of April in Aberdeenshire.

We have also seen some snow events in May. In 1979, it snowed every day somewhere in the UK between 1 and 6 May, including parts of the south and southeast. On 6 May 1997 over 200 stations across the UK recorded falling snow.

Hail or snow?

Some wintry showers observed this week were of hail rather than snow. Snow forms when tiny ice crystals in clouds stick together to become snowflakes, and fall to the ground when they become heavy enough. In the UK the heaviest snow falls tend to occur when the air temperature is between zero and 2 C.

Hail forms when ice particles or frozen water droplets get caught in updraughts of air and move up and down through the cloud. As they do so they grow in size by collecting water on their surface and colliding with other ice particles. They form ice balls then fall to the ground and can be as big as 6 inches in diameter, possibly causing some damage.

Further wintry weather is forecast over the next few days and a yellow warning for snow has been issued for parts of Eastern Scotland overnight Thursday into Friday, with some disruption possible.

Keep up to date with the latest forecast information on our forecast pages, Facebook and Twitter sites and via our Weather App.

Date Created

April 2016

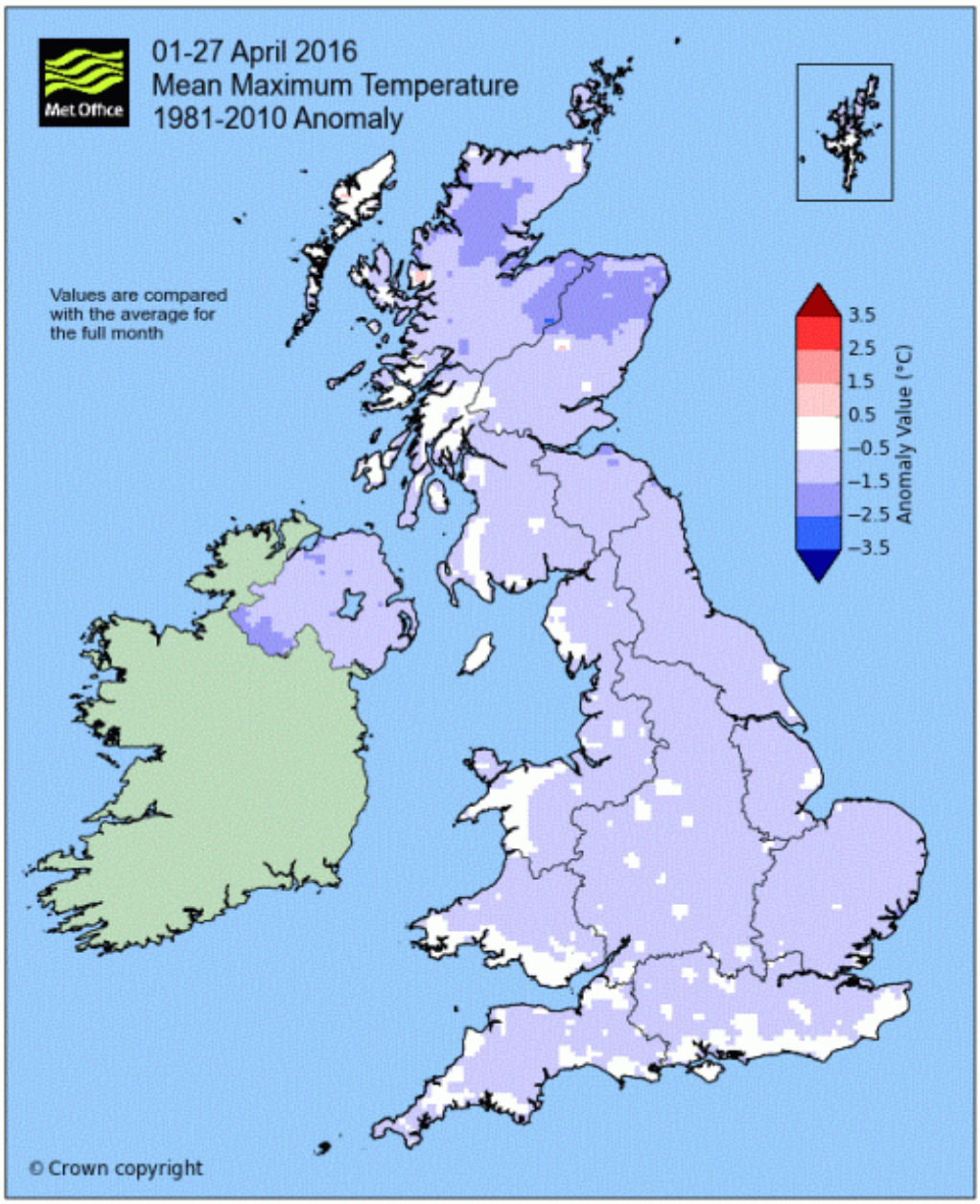
Despite the cold weather April has been an average month

Description

Provisional early figures for April 2016 (1st – 27th) show that so far, despite the chilly temperatures and snow seen by many, the month has been around normal with rainfall at 96% of average, sunshine 94% of average and the mean temperature just 0.7 C below average.

The fact that April (so far) is running at 0.7 C below the long-term average means it is likely to be not quite as cold as the Aprils of 2012 or 2013, though we cannot be sure about this until we have the complete month’s statistics.

Northern Ireland has been the coldest area at 1.1 C below the average and 14% less sunshine than is expected for April.



Mean Maximum Temperature for April 2016

Wales recorded the highest temperature of the month at 20.3 C in Porthmadog on 21st April and Scotland recorded the lowest temperature of -5.6 at Kinbrace on 28th April.

EARLY	maximum temperature		mean temperature		sunshine duration		precipitation	
Apr-2016	Actual		Actual		Actual		Actual	
	degC	degC	degC	degC	hours	%	mm	%
Regions								
UK	10.6	-0.8	6.7	-0.7	139.0	94	69.7	96
England	11.7	-0.7	7.5	-0.6	146.8	95	58.0	99

Wales	11.0	-0.6	7.1	-0.5	148.4	96	78.6	88
Scotland	8.8	-1.0	5.3	-0.8	125.5	93	86.8	95
N Ireland	10.4	-1.2	6.5	-1.1	126.7	86	69.8	93

We have seen some snow across parts of the UK this month, some of it leading to severe weather warnings to be issued. The last time we had a snow warning in April for the UK was in 2013, however we did have some warnings for snow in May last year. Statistically it is more likely to snow in April than November (1981-2010 records), the average number of days of snow in April is 2.3 compared to 1.7 days for November.

Data from the Met Office's UK digitised records dates back to 1910. You can explore our climate data on our website. With still 3 days of the month still to go it's not possible to make claims about the whole of April.

As we head into the bank holiday weekend it is looking unsettled with Saturday looking like the better day for many. Keep up to date with the latest forecast information on our forecast pages, Facebook and Twitter sites and via our Weather App.

Please note these provisional figures, especially for rainfall and sunshine are subject to revision. Anomalies are expressed relative to the 1981-2010 averaging period.

Date Created
April 2016

The outlook for the May Day Bank Holiday weekend

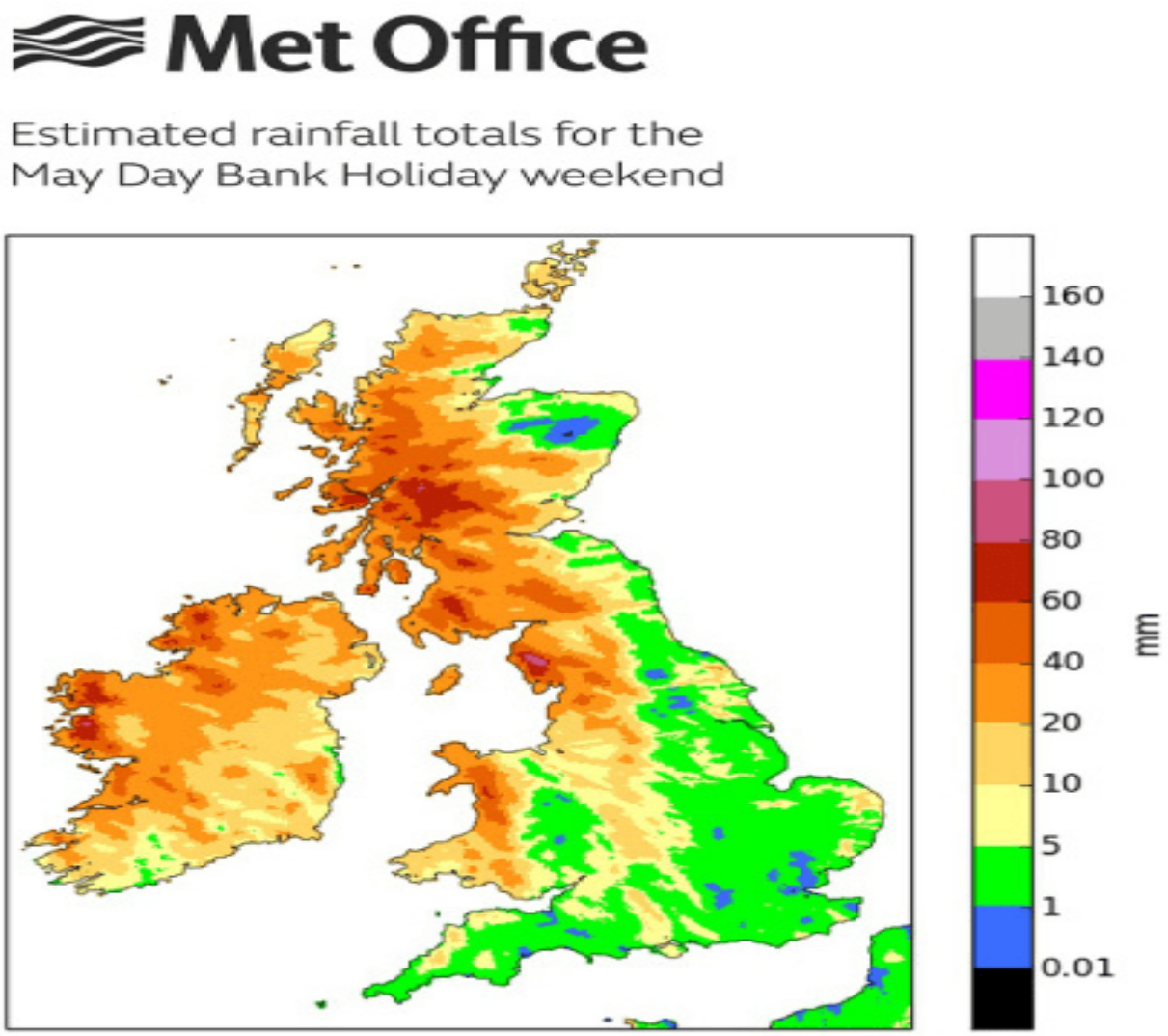
Description

The Bank Holiday forecast shows rain for many parts of the UK, but particularly the north-west, with heavy bursts affecting western Scotland, Cumbria, the northwest of Wales and parts of Northern Ireland from Sunday night into Monday. It will be less cold than it has been recently, although the wet and windy weather will not make it feel too warm.

Saturday should be a reasonable day for many with sunny spells, although still with showers scattered around, some of which could be heavy.

Central, southern and south-eastern parts of Britain will experience a bright start on Sunday. However, thicker cloud, accompanied by freshening winds, will spread from the north-west to reach most parts by

the end of the day, although south-eastern and eastern parts will stay mostly dry.



Deputy Chief Operational Meteorologist, Laura Gilchrist said: “The heaviest and most persistent rain is likely over the high ground of north-western UK later on Sunday and into the start of Monday.

“It will become windy in most places this weekend, with gales in exposed areas in the north-west. There is a low risk of severe gales developing in the far north-west at times.”

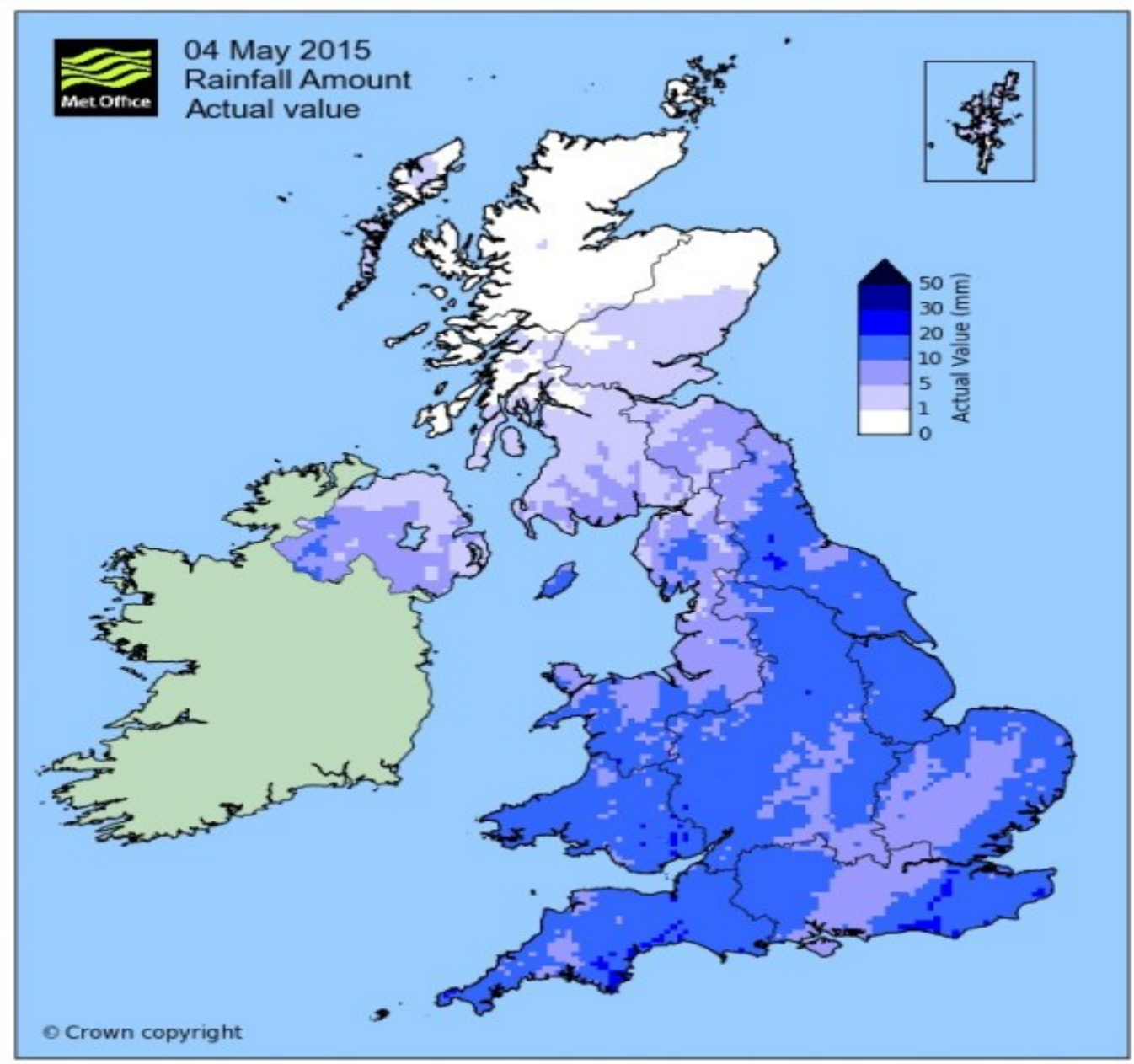
The rain will clear south-eastwards during Monday, revealing a mixture of sunshine and showers. The rain is expected to have cleared from south-east England by the evening.

Laura added: “Those spending time outdoors in north-western UK on the Bank Holiday Monday should be prepared for the risk of frequent blustery showers, which could be accompanied by a risk of hail and thunder. These showers could fall as snow on Scottish mountains, although it’ll be less wintry than it has been of late.”

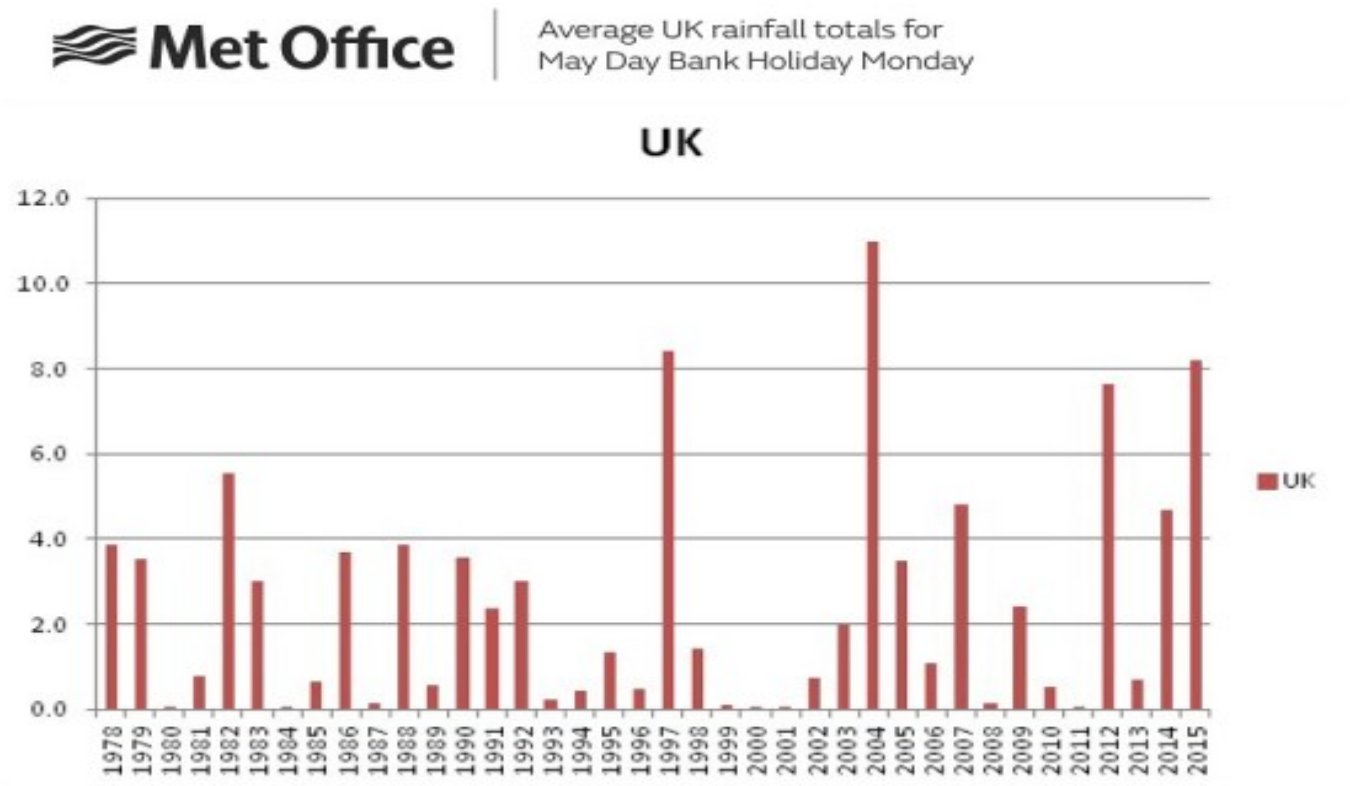
Although the forecast features rainfall across parts of the UK on Monday, contrary to popular belief,

Met Office figures reveal it doesn't always rain on the May Day Bank Holiday.

The May Day Bank Holiday was introduced across the whole of the UK in 1978. Average records for England, since 1978, reveal that over one third (14) of the 38 May Day Bank Holidays have been largely dry (receiving 0.2mm rain or less). However, last year's May Day Bank Holiday (graphic below) was the wettest in England, as an average of 12mm rain fell. An average of eight millimetres of rain fell across the UK overall.



According to the records, England and Wales have had the largest number of largely-dry May Day Bank Holiday Mondays with 14 of the years since 1978 having days of 0.2mm of rain or less. Scotland had the fewest number of virtually-dry days with nine. Northern Ireland has recorded 13 days with rainfall of less than 0.2mm.



With an average of 11mm of rain, the 2004 May Day Bank Holiday was the wettest in the UK.

According to the records, none of the four UK countries recorded an average of more than 5mm between 1998 and 2001.

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